

A' [0007] According to one aspect of the invention, a digital communications network includes a shuffling buffer at an input node to shuffle blocks of the data and thereby substantially reduce self-similarity in the data. It also includes at least one transmission node through which the shuffled data is sent, and a reconstruction buffer at a client node to reconstruct the shuffled data into its original order.

CLAIMS:

Please replace claims 1, 8, and 10-13 with the following amended claims:

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- 1 1. (Amended) A method for transmitting a data stream that exhibits
2 self-similarity through a digital communication network, comprising the steps of:
- 3 (a) receiving a plurality of blocks in the data stream, each block including
A2 4 a plurality of data values;
- 5 (b) reordering the blocks according to a predetermined deterministic
6 scheme to reduce the self-similarity of the data stream;
- 7 (c) transmitting the reordered blocks through the digital communications
8 network to a receiving node; and
- 9 (d) reordering the blocks again, at the receiving node, to reverse the
10 predetermined deterministic scheme and regenerate the data stream.

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- 1 8. (Amended) A data transmission interface for a digital
A3 2 communications network which transmits data from an input node to an output node, a
3 portion of said data exhibiting self-similarity, comprising:
- 4 means for receiving blocks of data to be transmitted through the network,
5 each block including a plurality of data values;

6 a shuffling buffer which reorders blocks of the received data according to a
7 predetermined deterministic scheme reduce the self-similarity of the data and to provide
8 the reordered blocks of data to the input node of the network; and

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9 a reconstruction buffer, coupled to receive the reordered data from the
10 output node of the digital communications network, the reconstruction buffer reordering
11 the data to reverse the predetermined deterministic scheme and reconstruct the received
12 data.

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1 10. (Amended) The digital communications network of claim 8, further
2 comprising a plurality of transmission nodes in the data communications network, each
3 transmission node having a queuing buffer, wherein each queuing buffer has a
4 predetermined memory size sufficient only to queue data that does not exhibit self-
5 similarity through the network.

1 11. (Amended) A data transmission interface method which configures
2 data exhibiting self-similarity for transmission through a digital communications network
3 from an input node to an output node of the network, the method comprising the steps of:

4 receiving blocks of data to be transmitted through the network, each block
5 including a plurality of data values;

6 reordering the received blocks data according to a predetermined
7 deterministic scheme reduce the self-similarity of the data;

8 providing the reordered blocks of data to the input node of the network; and

9 retrieving the reordered blocks of data from the output node of the network;
10 and

11 reordering the data to reverse the predetermined deterministic scheme and
12 reconstruct the received data.

1 12. (Amended) A computer readable carrier including computer
2 program instructions that control first and second computers coupled, respectively, to an
3 input node and an output node of a digital communications network, the computer
4 program instructions implementing a method that formats data which exhibits self-
5 similarity for transmission through the digital communications network, the method
6 comprising the steps of:

7 receiving blocks of data to be transmitted through the network at the first
8 computer, each block including a plurality of data values;

9 reordering the received blocks data according to a predetermined
10 deterministic scheme at the first computer to reduce the self-similarity of the data;

11 providing the reordered blocks of data to the input node of the network;

12 retrieving the reordered blocks of data from the output node of the network
13 at the second computer; and

14 reordering the data, at the second computer, to reverse the predetermined
15 deterministic scheme and reconstruct the received data.

1 13. (Amended) A computer readable carrier including computer
2 program instructions adapted to instruct a general purpose computer to implement a
3 method that substantially reduces self-similarity of data using a scheduling method,
4 the method comprising the steps of:

5 (a) receiving a plurality of blocks of data, each block having a
6 predetermined block size; and

7 (b) reordering the blocks of data according to a predetermined
8 deterministic scheme to substantially reduce the self-similarity of the blocks of data.
